Remarts on Barbier de Meynard's edition of $1 b n$ Khordádbeh and on the Land-tax of the empire of the Khalyfs.-By Dr. A. Sprevger.

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Le live des routes et des provinces d' Ibn Khordádbeh, texte arabe pullié, traduit, et annoté par C. Barbier de Meynard. Paris, 1865.

Monsieur Barbier de Meynard is known to us as the author of the Dictionnaire Géographique de la Perse, and as the editor and translator of the Travels of Ibn Bațúṭa and of the Golden Meadows (or more correctly, as Gildemeister explains this book title, "the gold washings) of Masúdy. To these important publications he has lately added that of Ibn Khordádbeh, and at present he is engaged with Moqaddasy. As soon as he has completed this work, we may say that he has done more for oriental geography, than all Arabists past and living together. Barbier de Meynard has visited the East, and he is an 'Alamdyda and a man of vast crudition. His way of working differs essentially from that of his confrères of the old rotten school. He gives us good texts and close yet elegant translations, and does not waste his time in puerile notes, replete with philological subtleties and nonsensical explanations, in which men whose ideas do not extend beyond the narrow limits of the school, delight so much.

The most ancient MS. of the geography of Ibn Khordádbeh is that of Oxiord, which has hitherto been considered as unique. To the zeal of Monsieur Barbier de Meynard and to his knowledge of the East we owe the discovery of another copy, which was found at Constantinople. Notwithstanding this important discovery, it was an extremely difficult task to establish a good text of Ibn Khordádbeh. I do not maintain Barbier de Meynard has succeeded in every instance to fix the correct reading, but I assert, without fear of contradiction, that no Orientalist could have done more for amending the text than he, for no man has a better knowledge of Eastern geography. The editor suffered under one great disadvantage : he could not consult the MS. of Oxford, whilst the work went through the press, and the transcript which he made use of was not taken by himself. The Oxonians are as jealous of their literary treasures as an eastern prince of the hundreds of ladies in his harem, and as they have no particular
predelection for Eastern lore (they have in fact better things to do), they derive about as much advantage from them. I copied the Oxford MS. for my own use, and in some instances I prefer my own reading. Baron de Slane published in the "Journal Asiatique" an account of Qodáma's work on the Kharáj, a book which I shall frequently quote in this paper. I might probably have avoided many mistakes arising from the incorrectness of my extracts from Qodáma, if I had had the good fortune to consult the Baron's remarks, but unfortunately I do not possess the Journal.

Ibn Khordádbeh wrote about A. H. 250 (A. D. 864.) His geography is small, and fills only 127 pages octavo, but it is of immense importance, inasmuch as it consists almost exclusively of official documents, and contains the caravan and dawk stations of the whole empire of the Khalyfs, and the amount of revenue of every district. I have inserted his itineraries in my " Post-und Reiserouten des Orients," and some of them will be taken from that compilation and embodied, as Mr. Hyde Clark writes to me, in Murray's Guide for the East. I therefore give here a short account of the revenue of the Khalyis, extracted from Ibn Khordádbeh.

I must premise a few remarks on the weights and measures of the Arabs, making use of the researches which I made on the weights in my Leben und Lehre des Mohammad, Vol. III. p. 141, and in an essay on the Wegmasse und Gradmessung der Aegypter, Griechen und Araber, which is not yet published.

The standard of the Musulman weights is the Aureus of Constantine: 72 Aurei $=1$ Roman pound $=5256$ English grains Troy according to Gibbon, $=6165$ grains de Paris according to Böckh. The Aureus, considered as the unit of weight, is called Mithqál, and may be taken $=4.6$ Grammes or somewhat more. This weight of pure gold is according to the present value of the precious metals $=15.97$ Francs. The Musulman Dirham is in weight $=\frac{7}{10}$ Mithqál, and if consisting of pure silver, its value is $=72$ Centimes. 1 Baghdádian rotl pound (the one mentioned in law-books) $=128 \frac{4}{7}$ Dirhams $=$ 90 Mithqáls $=1 \frac{1}{4}$ Roman pounds $=409.536$ Grammes $=1.1$ pound Troy (nearly).

Ah other Musulman weights we must reduce, if possible, to the Mithqál ( $=$ Dynár $=$ Aureus) ; for there existed various systems :
the grain and the weights，calculated by the number of grains which they contain，had，in some parts of the empire，and at one time，a greater or Iesser value than in other parts and at other periods． There is a grain of which 72 make a Mithqál，there is a grain（شع⿰⿻𨈑㇒弓） of which 100 make a Mithqál，one of which 96 make a Mithqál，one of which 68 $\frac{4}{7}$ make a Mithqál，and one of which 60 make a Mithqál， but this grain is called Habba and not Sháyra．The fact seems to be that the Persians，and after them the Mohommedans，found that the Roman Aurei are more equal in weight than any other coin，and for this reason they used it as standard，calculating the value of their own weight by Aurei．In some cases，slight alterations in the value of their own weights seem to have been made in order to adapt them better to this foreign standard．The apothecaries＇weight，as we learn from Avicenna，was Greek，but not without some alteration，

According to the Dictionary of Techn．Terms，p．176，there existed in the early ages of the Islam the same system as was in later times preserved at Samarqand．It may be expressed as follows ：

| Mithq̛ál． | Daneq． | Tassúj． | Habba． | Grain（Sháyra．） |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 6 | 24 | 48 | 96 |
|  | 1 | 4 | 8 | 16 |
|  |  | 1 | 2 | 4 |
|  |  |  | 1 | 2 |
|  |  |  |  | 1 |

Another system or Çanja we find in the Qámús under Makkúk，ít may be expressed as follows ：

| Mithrial． | Dirhem． | Dáneq． | Qyráț． | Tassáij． | $\begin{aligned} & \text { Habba } \\ & \text { (grain.) } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $1{ }^{13}$ | $8 \frac{4}{7}$ | 171 7 | $34 \frac{2}{7}$ | $68 \frac{4}{7}$ |
|  | 1 | 6 | 12 | 24 | 48 |
|  |  | 1 | 2 | 4 | 8 |
|  |  |  | 1 | 2 | 4 |
|  |  |  |  | 1 | 2 |
|  |  |  |  |  | 1 |

This system is in the Qámús continned beyond the Mithqail，as follows：

Makkúk. Kaylaja. Maná. Ro'l Ounce. Istír. Mithqál.
(pound.)

| 1. | 3 | $5 \frac{5}{8}$ | $11 \frac{1}{4}$ | 135 | 225 | $1012 \frac{1}{2}$ |
| :---: | :---: | :---: | :---: | ---: | :---: | :---: |
|  | 1 | $1 \frac{7}{8}$ | $3 \frac{3}{4}$ | 45 | 75 | $337 \frac{1}{2}$ |
|  | 1 | 2 | 24 | 40 | 180 |  |
|  |  |  | 1 | 12 | 20 | 90 |
|  |  |  |  | 1 | $1 \frac{2}{3}$ | $7 \frac{1}{2}$ |
|  |  |  |  |  | 1 | $4 \frac{1}{3}$ |
|  |  |  |  |  |  | 1 |

In this table three systems of weight are brought together : the Roman monetary, the Greek apothecary, and the Persian heavy weights. I ought to observe that the grain of $\begin{gathered}\text { ش̈ } \\ \text { in in Herat was, }\end{gathered}$ even in later times, so small, that 100 such grains were required to make up a Mithqāl. In some places 3 Habba made a Tassúj.

I now insert an abstract of the calculations of 'Alyy Hasany, who wrote at Murshidábád in A. H. 1164, transcribed from his autograph.

1 grain of barley $=2$ grains of riye $=4$ grains of mustard.
1 Másha $=8$ Raty $=36$ grains of barley $=72$ grains of riye.
$1 \mathrm{Tola}=12$ Mashas $=96$ Raties $=9$ Dirhams of the law-books $=6 \frac{3}{10}$ Mithqáls.

A Paysa (copper coin) of 'Alamgyr has exactly the weight of one Tola, but the Paysa of Bengal, current in 1164, weighs $10 \frac{1}{2}$ Raties.

1 Sér of 'Alamgyr $=60$ Tolas.
1 Man of 'Alamgyr $=40$ Sērs.
1 Bengal Rupee $=10$ Mashas and 2 Raties.
1 Delhi Rupee $=10$ Mashas.
1 Ashrafy $=9$ Mashas and 6 Raties.
1 Qyrát $=\frac{1}{20}$ of a Mithqál of the traditions $=3 \frac{3}{7}$ grains of barley $=\frac{2}{3}$ Raty and $\frac{3}{7}$ grain.

1 Dáneq $=\frac{1}{6}$ Dirhem $=8$ grains $=1$ Raty and $3 \frac{1}{2}$ grains
1 Dirhem $=6$ Dáneq $=48$ grains $=\frac{7}{10}$ Mithqál $=10 \frac{2}{3}$ Raties.
1 Mithqál $=68 \frac{4}{7}$ grains $=20$ Qyrát $=1 \frac{3}{7}$ Dirhams $=14$ Raties and $1 \frac{1}{14}$ grains.

1 Rotl of 'Iráq $=130$ Dirhems $=91$ Mithqáls $=6240$ grains $=$ $\frac{2}{3}$ Rotl of Madyna $=1380 \frac{2}{3}$ Raties.

1 Rotl of Makka $=2$ Tráqy Rotls $=182$ Mithqáls $=260$ Dirhems $=12480$ grains $=2773 \frac{1}{2}$ Raties.

1 Modd $=292 \frac{1}{2}$ Dirhems $=204 \frac{3}{4}$ Mithqáls $=14040$ grains $=$ $2 \frac{1}{ \pm}$ Iráqy or Baghdadian Rotls $=1 \frac{1}{2}$ Rotl of Madyna $=3120$ Raties.

According to some, one Modd $=257 \frac{1}{7}$ Dirhems.
1 Çá $=4$ Modd $=1170$ Dirhems $=819$ Mithqáls $=56108$ grains $=12480$ Ráties.

1 Korr $=1200$ 'Iráqy Rotls $=533 \frac{1}{3}$ Modd $=133 \frac{1}{3}$ Çá' $=$ 156000 Dirhems $=109201$ Mithqāls $=7488000$ grains $=2070 \frac{13}{36}$ Sérs.

1 Wisq $=60$ Çá.
The ralues of Arabic weights reduced to Indian weights in this table, is certainly wrong. It is incomprehensible, how a man in his senses could believe that one Paysa is as heavy as $6 \frac{3}{10}$ Dynárs or 9 Dirhems. This error seems to arise from the supposition that an Indian grain is exactly equal to the largest Arabic grain, of which $68 \frac{4}{7}$ are sufficient to make a Mithqál, and $4937 \frac{1}{2}$ one Roman pound. Some other data of this table are probably equally incorrect, yet it contains some information which may be useful.

The value of cubic measures for grain is expressed by the Arabs in the weight of the quantity of barley which they contain. At this moment I have no book in which they are explained, and I must refer to dictionaries Their explanations unfortunately do not square, luecause the Çá and the Maná have different values in different authors. According to Abú Hanyfa 1 Çá of Barley $=8$ Rotls; accorling to Shái'y $=53$ Rot ; according to the Shy'ites $=9$ Rotls; anil according to Kolyug $=1170$ Dirhams $=9 \frac{1}{10}$ Rotls. On the Maná Meninsky say's: apud Arabes Hispanos duas libras, apud Asiatas 260 Drachmas appendebat. Maná ægyptiaca, pondus sedecim unciarum ; mana graca, pondus 20 unciarum ; maná alexandrina pondus 30 unciarum. (Casiri Bib. ar-hisp.)

The measures of importance for our present purpose are the Qafyz, the Korr and the Jaryb.

1 Qafyz $=8$ Makkúk (which is not the name of a weight, but of a culic measure). Consequently 1 Qafyz $=8100$ Mithqáls $=90$ Rotls. According to Golius, 1 Qafyz $=12$ Çás; or if we take the Çá, with Abú Hanyfa, to 8 Rotls $=96$ Rolls.

We find in the Qamús also the following explanation of the

" 1 Makkúk $=\frac{1}{2}$ Wayba; and 1 Wayba $=22$ or 24 Modds, that is to say Modds of the prophet." And under Modd he says: "According to the people of 'Iráq, the Modd is equal to two Rotls, and according to the people of Hijáz to $1 \frac{1}{3}$ Rotl; " and lower down he states the value of the Modd of the prophet at one-fourth of a Çá'. Now if we take the Çá, with Abú Hanyfa, at 8 Rotls, the Modd has as in 'Iráq 2 Rotls, and if we take the Çá', with Sháfiy, at $5 \frac{1}{3}$ Rotls, the Modd holds as in Hijáz $5 \frac{1}{3}: 4=1 \frac{1}{3}$ Rotls; and I therefore suspect that in one place two Rotls, in another place $1 \frac{1}{3}$ Rotls, were called Modd of the prophet. If we take the Modd at two Rotls, we have for the value of the Qafyz $\frac{2}{2}{ }^{4} \times 2=24$ Rotls." It is impossible to reconcile this statement with the preceding one.

There are in the Qámús two other definitions of the Makkúk, eight of which make one Qafyz. According to the one, a Makkúk weighs from six to eight ounces, that is to say, half a Rotl or $\frac{2}{3}$ Rotls. It is impossible that this be the value of the Makkúk in question. According to the other statement, 1 Makkúk $=1 \frac{1}{2}$ Çá or 12 Rotls, if we give to the Çá the value of 8 Rotls.

From a passage of Qodáma, it appears that any small measure of corn was called Makkúk-bushel, and that the Makkúk was different in different countries. In the definition of the value of the Qafyz, I think the large Makkúk is meant, and I therefore assume 1 Qafyz $=96$ Rotls or Arabian pounds.

The Korr. At this moment I have no access to the Arabic text of the Qámús, but to judge from the Persian translation and from the extracts found in Golius and Freytag, it seems that the Qimús contradicts itself. Freytag, without stating the authority, says, 1 Korr $=12$ Wasq (camel-loads) and every Wasq = 60 Çá'. The value of the Wasq or Camel load depends upon the value of the Çá; it may therefore be 320 or 480 or 540 Rotls. A camel may carry rather more than two hundred weights on either side, and I therefore take 480 to be nearest to truth. A Korr would therefore be equal to 5760 Rotls.

According to the Persian translation of the Qámús, 1 Korr $=6$ ass-loads, and one ass-load $=60$ Qafyz. Now a donkey carries about half as much as a camel or less, but according to the above statement, 6 ass-loads are $=12$ camel-loads. Moreover 60 Qaiyz
weigh 5760 Rotls, a burden which no beast is able to carry. It is therefore clear that one Korr contains 60 Qafyz or 12 camel loads of 480 Rotls each. Another statement of the Qámús says, 1 Korr $=40$ Irdabb. The Korr is an 'Iráqian (Babylonian), and the Irdabb an Egyptian measure. One Irdabb $=24$ Çá or 6 Wayba. If the Wayba is taken at 24 Modd, and the Modd at $1 \frac{1}{3}$ Rotls, these two valuations agree ; for $24 \times 8=24 \times 6 \times 1 \frac{1}{3}=192$ Rotls $=1$ Irdabb. Consequently the weight of a Korr $=7680$ Rotls. We must bear in mind that this is a reduction of the largest Iráqian measure of grain to Egyptian measure, and it is very likely that the value of the Irdabb is stated in Egyptian Rotls, the weight of which I do not know; we can therefore make no use of this definition of the Korr. Golius gives the value of the Korr, on the authority of the Destúr alloghat, at 7100 Rotls. This approaches to the result which we have just found ; the question is only, what kind of Rotl is meant, and by what means did the author arrive at this result.

The Jaryb is defined in the Qámús as follows: 1 Jaryb $=4$ Qafyz; 1 Qafyz $=8$ Makkúk; 1 Makkúk = 3 . Kaylaja; and 1 Kaylaja $=1 \frac{7}{8}$ Maná. We see that this statement is a continuation of the one given above in a tabular form ; and it seems to be an abstract of a systematical comparison of 'Iráqian weights and measures; and we therefore keep to it. Consequently 15 Jaryb $=1$ Korr. I now continue the above table taken from the Qámús.

| Korr. | Jaryb. | Qafyz. | Makkúk. |
| :---: | :---: | :---: | :---: |
| 1 | 15 | 60 | 480 |
|  | 1 | 4 | 32 |
|  |  | 1 | 8 |
|  |  |  | 1 |

Consequently one Korr is equal in weight to 486080 Mithqáls or 6750 Roman pounds. I ought to observe that Abú Yúsuf mentions a Jaryb of 7 Qafyz, and that he as well as Ibn Sád say that a man may live on a Jaryb of grain one month. I should think that fifty or sixty Roman pounds would be sufficient for the support of a man ; and as the Jaryb of 7 Qafyz contains $787 \frac{1}{2}$ Roman pounds, I am at a loss, how to explain this statement.

The linear measures of the Arabs are probably not essentially different from those of the Greeks. 1 Háschimite or Royal cubit =

2 Greek feet $=32$ Arabic inches $=273.32$ lignes de Paris. The Arabs have besides a cubit of 24 inches (the $\dot{\text { ) }}$ ), and one (the black cubit) of 27 inches; the proportion of the former to the Háschimite cubit is as $3: 4$.

Regarding the square measures I am in the dark. According to an extract from the Alkhwánalçafá, inserted by Dieterici in the Zeitsch. d. D.M.G., 1 Jaryb of 10 Qafyz $=3600$ Háschimite square cubits. I suspect that there must have existed a Jaryb of $\frac{7}{4}$ of this value or $=6300$ Háschimite square cubits $=22700$ 口 Pieds de Paris. This is, however, a question which ought to be further investigated by those who have better sources.

The history of the finances of the East, as handed down by the Arabs, begins with the Súsánians, but the two accounts which we have of their revenue, are extremely difficult to be reconciled with each




Qodáma, in my incorrect extracts from the corrupted text, says:
 الها كان في يدلا

 ستهائنة الفالف درهم
There is no doubt that both accounts refer to the same fact, yet there is only one figure " 600 millions of Dirhams" in both identical. This figure appears to me to express the amount of revenue in Musulman Dirhams. Ten Musulman Dirhams are in weight equal to 7 Mithqáls, consequently 600 millions Dirhams $=420$ millions Mithqíls or $5,833,333 \frac{1}{3}$ Roman pounds. The first figure of Ibn Khordadbeh is consequently to be read 420 millions instead of 24 millions. At the time of Qodáma 15 Dirhams (silver) had the value of one Dynár or Mithqál (of gold); consequently gold was only $9 \frac{1}{2}$ times more valuable than silver. It seems, however, that gold had at times a higher rate, and that a pound of gold was equal in value to 10 pounds of silver. 420 Mithqáls of silver were therefore equal to 42 Mithqáls or Dynárs of gold in value. I consequently propose to read in Qodáma 42 mil-
lions instead of $720,000_{\mathrm{o}}$ Dynárs. The only difficulty is caused by the figure of Ibn Khordádbeh, 795 millions Mithqáls (of silver). It is clear that the author wants to say, that after the eighteenth year of Perwyz the revenue increased, and as 795 is a higher sum than 600, I take that this is the highest figure to which the revenue rose during his reign. After these observations I change the figures, and translate the passage of Ibn Khordádbeh as follows: "The Kheráj of the whole kingdom which was gathered for the Chosroes Parwyz in the year 18 of his
 (الف وعشرون الف الف man Dirhems, 600 millions of Dirhems. Subsequently the revenue of his kingdom rose to 795 Mithqáls."

The passage of Qodáma I translate: "It is asserted that Chosroes Parwyz counted in the year 18 of his reign the revenue (for جباية read $\begin{gathered}\text { (ناحي) } \\ \text { ) }\end{gathered}$ have enumerated, the Sawád and the other districts, with the exception of the western part of the Musulman empire; for the frontier of his kingdom was Hyt, and the country west of it belonged to the Greeks. He found that the revenue amounted to 42 millions Mithqáls (of gold), this makes 600 millions of Musulman Dirhams (of silver)."

The Musulman Dirham was not known to the Persians, they counted the revenue, as it seems, in Dirhams which had exactly the weight of a Mithqál or of an aureus of Constantine of which 72 made a Roman pound, and for this reason, in the original account which was used both by Ibn Khordádbeh and Qodáma, the sum was stated in Mithqáls. The money was weighed, and of course, if it contained alloy, deduction was made. We are therefore able to calculate the income with great accuracy, it is equal to $172,800,000$ Rupees in value. If we reduce it to English money, we must bear in mind that the proportion of the value of gold to that of silver was not the same as in our days. In the Greek empire, it was fixed by law as $14 \frac{2}{3}: 1$, and gold was the standard. In the Persian empire, the proportion was probably as $10: 1$, and I am inclined to believe that in the document which Qodáma and Ibn Kordádbeh used, the amount of the revenue was stated both in gold and in silver. I have already observed that at Qodáma's time the proportion was $9 \frac{1}{2}: 1$, and I have shown (das

Leben des Moh., Vol. 3, p. 136) that in Mahommedan law, it is as $8 \frac{2}{5}$ : 1 and even as $7: 1$.

In Persia silver was the standard, in the Byzantian empire gold. The Insulmans made no change : in the provinces which had belonged to the kingdom of the Sasanians, silver remained the standard, and in Syria, Egypt and other provinces which they took from the Greeks, gold continued as the standard. In Makka and Madyna, silver became the standard as early as Omar I., but in southern Arabia the revenue was calculated by Dynárs (Aurei.) The great difference of the value which gold had at Constantinople under Constantine, and which it had in the Sasanian and later in the Arabic empire, throws an mexpected light upon the relative prosperity of the two countries. The fact requires no comment for those who know the elements of Political. Economy.

Ibn Khordádbeh begins his geography with a description of the Sawád-Babylonia. Immediately after the Musulmans had conquered that country, 'Omar I. sent 'Othmán b. Honayf to survey it for the sake of assessment. It appears that he measured the cultivated land of every district, and also for the sake of control the whole country en bloc. He found that it is from Hadytha in the north to 'Abbadán in the south 125 farsangs long, and from Holwán in the east to 'Odzoyb in the west 85 farsangs wide. The whole surface of cultivated and waste land (عامرو غامر) amounts therefore to 10625 口 farsangs or 136607143 Jaryb. Ibn Khordádbeh (MS. of Oxford) and Qodama calculate the surface in round figures at 136 millions of Jaryb.

Under the Sásánian king, Qobád b. Fyróz, the revenue of the Sáwád amounted to 150 millions Mithqáls (of silver or Persian Dirhams) $=$ more than 2 millions Roman pounds of silver $:=$ more than 214 millions of Musulman Dirhams. After the Musulman conquest, 'Omar I. derived a revenue of 120 millions Dirhams from it. This sum is named by Ibn Khordádbeh and Qodáma. Íbn Sád includes the revenue of Jebel and mentions a higher sum, but as two figures are wanting in his text, we cannot make out what he means, his words مائهة الف الف وعشُرون الف الفـوان الف) والووق (آلف) دزهم ونصف are

I shall speak on the assessment of 'Omar lower down. Here I will only observe that the 120 millions are made up by the land-tax and
capitation. The latter may have amounted to 7 millions: the male population of full age consisted of 500,000 souls, and the poorer classes had to pay 12 , the middling classes 24 , and the rich 48 Dirhams; supposing one in a thousand paid the highest, and one in a hundred the middling rate of capitation, this tax yielded $7,000,000$ Dirhems and the land $\operatorname{tax} 113,000,000$ Dirhems.

We see that the total income which 'Omar I. derived from the land of the Sawád is little more than half of that which it yielded under Qobád. It is not unlikely that 'Omar assessed it somewhat lighter, but the main cause of the diminution of revenue was the decay of the country. Babylonia has some resemblance with Holland, and the Sunderbunds, being the Delta of the Euphrates and Tigris; and it appears that great efforts have been made in former times to drain it and to protect it from inundation by dykes, and in measure as they were neglected, the land was converted into swamps. We find paludes in the map of Ptolemy, but they seem to have been of no great extent. The Tigris carries much silt, which is partly deposited in its bed, where it slackens its course, and consequently in the progress of time the bed became higher and threatened to inundate the country. To 1 revent this calamity, it was dammed in below Baçra, and the course was regulated : it was made straight, so that the water might carry off the deposit. During the reign of Qobadd (probably after the time at which he derived so high a revenue from the Sawad) the dyke was broken through below Kaskar, and the neighbouring country was inundated, but the government took no notice. Anushyrwán had the dykes restored and much of the land was recovered. In the year 6 of the Hijra (A. D. 628) both the Euphrates and the Tigris swoll amazingly, and destroyed many of the dykes. King Parwyz showed great energy, and it is asserted that in one day no less than 40 gaps were filled up; yet though he granted great sums from the public treasury for the repairs, he was mable to remedy the evil. A few years later, the Arabs waged war against the Persians. The dykes were in consequence completely neglected, and the swamps gained in extent. The Musulmans, after they had conquered the country, seem not to have pail any attention to the matter, and the Dihqáns-heads of districts-were unable to repair the dykes. Mo'awiya I. sent his client 'Abd Allah b. Darráj to Babylonia as collector, and he seems
to have been the first Mahommedan who recovered some land. Much greater efforts were made by the Nabathean Hassán, who was collector under the reigns of Walyd and Hischám b. Abd al-Malik, and cut two eanals to carry off the water. In A. H. 75, Hajjaj was appointed governor of Babylonia. He represented to Walyd II., that the drainage of the country would cost three millions of Dirhams. The Khalyf thought he could spend the money more pleasantly on eunuchs and singers, and refused to grant so large a sum. Moslima b. 'Abd alMálik, a relation of the Klalyf, proposed to him to drain part of the swamps, under the condition that he should draw the revenue of the recovered land. The Khalyf accepted the offer, and Moslima cut the two canals called Saylaya, and raised dykes. He succeeded in recovering a great extent of land, and the peasantry flocked to him to cultivate it. His family continued to derive the revenue from it up to the time of the overthrow of the Omayide Dynasty. The 'Abbáside Khalyf granted it to one of his relations, Dáwud b. 'Alyy b. 'Abd Allah b. 'Abbás. His heirs remained for some time in possession of it, lout eventually it was considered as one of the crown-lands $ع$ ع ال'

In A. H. 75 Hajjáj was appointed governor of Babyionia, and he ruled 20 years over that country. Ibn Khordádbeh says of the financial condition of the country during his sway: "The revenue gathered by Hajjaj did not amount to more than 18 millions Dirhams, and there swas consequently a diminution of one hundred (and two) millions. This was owing to his burning down villages, and to his oppression. Moreover he was obliged to give advances to the cultivators to the amount of two millions, so that only 16 millions reached the public treasury." It seems that the peasantry fled, for under the just 'Omar II. who ruled in A.H. 99, the revenue of the Sawád suddenly rose to 124 mililions.

It is a very unexpected fact that at the time of Ibn Khordádbeh not only the limits, but also the names of the districts were in the official language precisely the same which had been in use among the Sisánians, nay some of them seem to be even more ancient than the Sásánians ; for we neither find a district called Baghdád, nor one called Madáyin (Ctesiphon). The province in which these two cities lie, is called Shád-Hormuz and the district Kalwadzá, from an ancient town balf way between Baghdád and Madáyin.

The Sawád is divided into 12 Kúr, provinces, and originally it contained 60 Tasásyj, districts, but at the time of Ibn Khordádbeh only forty-eight. The whole province of Holwán, containing five districts, was added to Jebel. We have seen that Ibn Sád includes in reference to the time of 'Omar I. the revenue of Jebel in that of the Sawád. He probably means that of Holwán only, which at the time of 'Omar and of the Omayyids may have belonged to the Sawád. The province of the Tigris, containing 4 districts, was given to the Government of Baçra; and it is very likely that the crops which it had to supply to the State, were destined for the support of the troops stationed there. This, however, can only apply to the time of the 'Abbásides, for in former days they received their supply from MáhBaçra in Persia, which under the Abbásides was placed under another Government. One whole district had become a swamp and disappeared altogether. Two districts (one of them is lower Behqobád) had been converted into crown lands after the system of Khorásán. In this manner, the Sawad was shortened by 12 districts and reduced to for-ty-eight.

I insert here a detailed account of the revenue of the Sawád, according to Qolláma, and also (distinguished by asterisks) one according to Ibn Khordádbeh. In a very few instances I deviate from Baxbier de Meynard's text, and follow my own copy of the MS. of Oxford. Qodáma says of his account, it contains the income as it stands at present. I take the mean since the year 184, this being the first year of which documents are found in the public offices at Baghdád ; for the earlier records were destroyed by fire during the disturbances which took place in 183 under Amyn, known under the name of Ibn Zobayda.

| Western side of the Sawâd watered No. of No. of by the Tigris and Euphrates, Villages. Barns. Wheat. Barley |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Anbár and Nah | a'rúf, |  | - |  | 18,000 | ?)6,400 | 4,000,000 |
| * Anbár (alone) | ... |  | 5 | 250 | 2,300 | 1,400 | 150,000 |
| Qotrobbol, |  |  |  | - | 2,000 | 1,000 | $3,000,000$ |
| *Ditto, ... | . |  | 10 | 220 | 2,000 | 1,000 | 300 (sic!) |
| Maskan, |  |  | - |  | 3,000 | 1,000 | 150,000 |
| *Ditto, ... | ... |  | 6 | 105 | 3,000 | 1,000 | 300,000 |
| Bádúryya, | - |  | - | - | 3,500 | 1,000 | 1,000,000 |





Land-tax of the Kura (provinces)
of the Tigris, ... ... - - - - 8,500,000
In reference to the Ighár of Yaqtyn, mentioned in the preceding list, Qodáma says, no mention was made of it in the days of the Persians, nor was there such an Ighár existing in their times. Yaqtyn had claims on the government, and he received as payment lands in various districts, subsequently they lapsed to the government, and they were called Ighár of Yaqtyn. The canal of Çilla was dug by order of Mahdiy in the districts of Wásite, and thereby a good deal of waste land was reclaimed. The produce (of the Ighar and of the reclaimed land) was destined for prayers and defraying other expenses in the two holy places (Makka and Madyna). It is said the arrangement was made that two-fifths of the crops were to be given up by the cultivators for this purpose. This settlement was to last fifty years, after the lapse of which a new settlement was to be made.

Ighár (ايیار) is correctly explained by Barbier de Meynard, dict. geogr. de la Perse, p. 65, "Il s' applique à une ville ou à une propriété qui, moyennant une certaine somme stipulée une fois pour toutes, et payée chaque année directement au soulthan, est exemptée de la visite et du contrôle des percepteurs du fisc." Qodamá defines it

 في بيت الهال او غيرها من الأمصار
"Ighár (protection against danger) means, that a landed tenure is exempt from the visits of the collectors and from what is connected with them (rapacity and oppression), in consequence of an order of the head of the State which fixes a certain ammual quit-rent to be paid either into the public treasury, or into the treasury for the support of a military cantonment." The principal advantage of an Ighár consisted in being free from those harpies, the Omlas.

The provinces of the Tigris which form the last and largest item, may be those which were ceded to the Baçra government, and they seem to answer to those enumerated by Barbier de Meynard, p. 133, under Nos. V. and VI.

Sume of the figures in the preceding table, taken from the very incorrect copy of Qodáma, are certainly erroneous, and may be corrected by comparing them with those of Ibn Khordádbeh. It must, however, be borne in mind that the data reported by the two authors are not in all instances the same. At the time of Ibn Khordadbeh, for instance, the whole of the revenue of the Tigris provinces seems to have been levied in cash, at the time of Qodima partly in cash and partly in kincl. For us the sum total alone is of some interest, and this is given






"The revenne of the Sawád, exclusive the poor rates of Baçra, consists of 117,600 Korrs of wheat, 99,721 Korrs of barley, and $8,095,800$ Dirhams of silver. The grain at the mean market price, that is to say at the rate of two Korrs, one of wheat and one of barley at 60 Dynárs, taking one Dynár at the present rate of exchange equal to 15 Dirhams, is worth $100,361,850$ Dirhams. Adding this sum to the cash payments, there results a total of $108,457,650$ Dirhams. The poor rates of Baçra amount annually to six million Dirhams, the
average revenue is therefore (some words unintelligible) 114,457,650 Dirhams."

These data enable us to calculate the price of grain at the time of Qodáma. We convert the $100,361,850$ Dirhams into Dynárs, by dividing the number by 15 , and we obtain $6,690,790$ Dynárs. With this money we purchase all the barley, and as many Korrs of wheat as there are Korrs of barley. Our expenditure amounts to $99,721 \times$ $60=5,983,260$ Dynárs to spend and 17,879 Korrs of wheat to buy. If we divide the former number by the latter, we find that the Korr of wheat costs $19 \frac{1}{2}$ (i.e. 39 Dynárs and 10 Kirátss), and consequently the Korr of barley $20 \frac{1}{2}$ Dynárs. The result cannot be far from the truth ; for at the time of Mohammad wheat was at Madyna twice as dear as barley (comp. my Leben des Moh., Vol. 3, p. 140), and consequently, if one Korr of wheat and one Korr of barley together cost 60 Dynárs, the price of wheat ought to be 40 and that of barley 20 Dynárs. But there remains much too great a cost in the division than that Qodáma should have neglected it. I therefore propose to read 117,691 Korrs of wheat instead of 117,600 . If we adopt this reading, a Korr of wheat cost 39 Dynárs and $7 \frac{1}{2}$ Kiráts ( 20 Kiráts $=1$ Dynár) and a Korr of barley 20 Dynárs $12 \frac{1}{2}$ Kiráts. A pound of bread (English weight) may have cost about 3 farthings.

In Qodáma occurs the following passage regarding the assessment of




Qásim b. Sallám asserts that 'Omar, the son of Khaṭab, sent 'Othmán b. Honayf of Madyna, and that this 'Othmán measured the Sawád, and found that it contained 36 (sic) millions Jarybs, and he imposed upon every Jaryb of land, cultivated or fallow, provided it could be irrigated, a tax of one Qafyz and one Dirham. Qásim says, I have heard that this Qafyz was a cubic measure then in use in the Sawád, and that it was called Shabirqány. Yakya b. Adam says it is identical with the Makhtúm of Hajjáj.

This account differs from that of other authors, who record that ${ }^{\prime}$ Omar I. assessed the Sawád as follows :-


The assessment of Omar was according to a tradition of Jábir by himself called Tasq Freytag considers this term cognate with the expression of the Arabic Christians Taqs $\quad$ mand it is perhaps also related with qisț. No doubt it is derived from the same Greek word from which our tax comes. I believe, but am not sure, it was a permanent settlement, though owing to the disposition of the rulers and to circumstances, changes have taken place. The term tasq is applicable only to taxes levied from conquered land.

It is pretty certain that the land-tax amounted to about onehalf of the value of the produce. Qodáma speaks of the tithes, and


 The taxes on conquered land have been fixed in النصil accordance to the annual produce (of several years); consequently the tax of a district has been fixed agreeably to justice. In proof thereof we may mention that in case it be necessary to convert tasqland into tithe-land, one-fifth of the original tasq of the district is taken, because $\frac{x}{\overline{2}}: 5=\frac{x}{\overline{10}}$ ( $x$, in the original الاصل means in this case the value of the produce.)

I believe we may safely infer from this passage that in the assessment of conquered lands, the same rules prevailed as in fixing the amount of tithe, with the only difference that one-half instead of onetentlu was levied. The general rule was that land which was watered without the expense of labour, paid the whole tithe.

If labour was expended, one-half of the tithe or more was taken.. Thus, if land was watered twice by a canal running through it, or if it was three times irrigated by means of a bucket by which water is raisell from a canal, the tithe amounted not to ten, but to seven per cent., viz. 4 per cent. for the canal and 3 per cent. for the bucket.

The 'Abbásides changed the system of revenue in the Sawád. Qodáma says: Abú 'Obayd Allah Mo'áwiyya b. 'Abd Allah, the
secretary (Kátib) of the Khalyf Mahdiy reported on the inconveniences which arose, if the tasq-payers were obliged to pay a fixed sum of money, or to supply a certain quantity of grain, and he proposed that the taxes should be calculated (annually) by the Jaryb, as there was no telling whether the prices would sink or rise. In the one case the cultivator, in the other the government were in the disadvantage. The best thing, he thought, would be to introduce the same rule which the prophet adopted with regard to Khanghar : he left to the inhabitants the land under the condition that they were to give up to him one-half of the produce (as much the cultivators ought to give up from irrigated land) ; but if the labour of irrigation was very hard, they ought to give up only one-fourth; and if it was less hard, one-third. The choice was to be left to the farmers to give up as much straw* to government as was due to it (i.e. $\frac{1}{2}$ or $\frac{1}{3}$ or $\frac{1}{4}$ according to circumstances), or to sell it and pay the tax according to the market price of grain. In fixing the amount of revenue on vineyards, trees of every description, vegetables and every kind of produce, agreeably to the dictates of justice, the nett price which would be realized by the sale was to be calculated, taking into consideration what distance the land was from the market or harbour, and how great the expense and loss of time would be for bringing it there. After all these deductions one-half was to be charged as revenue.

This system of revenue, which was eventually introduced, and by which the above detailed statements of Ibn Khordádbeh and Qodáma are to be explained, is called Moqásima, a term which is used up to this day in India very nearly in the same signification as it was used at the time of our author: "partition of the actual crop between the cultivator and the State, either in kind or in value."

Certain it is that one-half of the produce was taken from the cultivators by the 'Abbásides; but it is not certain whether ' 'Omar made so high a settlement as to deprive the farmers of the value of one-half, and whether the above passage of Qodáma is applicable to the time previous to the Abbáside dynasty. But we may safely assume that even at the time of 'Omar $\mathbf{I}$. the revenue amounted to two-fifths. Now if a Jaryb of wheat paid 4 Dirhams to Government, the value of the whole produce of a Jaryb could not be more than

10 Dirhams. This does not square either with the prices of grain in those days, nor with the size of the Jaryb which I have found. There must be something wrong in my calculations, and I therefore would call the attention of men in India, who take an interest in such matters, to the subject. They have means of ascertaining facts connected with revenue and agriculture, which are wanting in Europe.

I now insert a statement of the revenue of the other provinces of the empire of the Khalyfs, according to Qodáma.* He usually gives the numbers and names of the districts into which every province was divided for the sake of administration, and states the totals of the revenue. As the MS. is very incorrect, I omit the names of districts and confine myself to the provinces:

Dirhams.
Ahwáz,

$$
18,000,000
$$

Fáris, ..... $24,000,000$
Kermán, ..... 6,000,000
Mekrán, the Moqátea amounted, ..... $1,000,000$
Ispahán, $10,500,000$
Sijistan, the Irtifá' revenue, according to agree- ment, amounted to, ..... $1,000,000$
$60,500,000$Khorásán. If I understand right, this immenseprovince was leased to Abd Allah b. Táhir, thatis to say, he received the whole revenue, defray-ed the expenses of administration, and kept thesurplus after having sent the tax to the treasuryof the Khalyf in cash including the value of a cer-tain number of horses and slaves furnished to him, $38,000,000$
Máh-Kúfa, i. e. Daynawar, ..... $1,000,000$
Máh-Baçra, i. e, Nohawand, ..... 800,000
Hamadán, ..... 1,700,000
Masibzán, ..... $1,100,000$
Mahrján-Qazaq, ..... $1,200,000$
Qomm and Qóshán, ..... $3,000,000$

[^0]Azerbyjan, Ardebyl, Marand, \&c., ..... 4,500,000
Rayy, ..... 20,000,000
Qazwyn in A. H. 237, ..... 2,628,000
Qúmis, ..... 1,105,000
Jorján, ..... 4,000,000
Táberistán and Ámol in A. H. 234, ..... 200,163,070 (?)
Tikryt, Sonn and Bawázij (on the Tigris), ..... 700,000
Mosúl pays into the treasury of the Khalyf, ..... 2,750,000
But the revenue of Mosul amounts to, ..... 6,800,000
Jazyra Ibn 'Omar (close by Mosul), ..... 4,635,000
Arzen, ..... $4,100,000$
Tarún in Armenia, the Moqáte'a amounts to, ... ..... 100,000
Armenia, the Irtifá' revenue amounts to, ..... 400,000
Diyár Momiur (northern Mesopotadha), ..... 6,000,000
Taryq Forát (west bank of Euphrates), ..... 2,700,000
17,935,000
Dynárs.
Aleppo and Qinnesryn, ..... 360,000
Homes, ..... 118,000
Damascus, ..... 110,000
Jordan, ..... 195,000
Egypt and the coast of the Mediterranean as far as Barqa, ..... 2,500,000
Haramayn, i. e. Northern Arabia, ..... 100,000
Southern Arabia (Yaman), ..... 600,000
Bahrayn in A. H. 237, ..... 510,000
'Omán, ..... 300,000

The author concludes: "These are the provinces, as we have enumerated them, and this is the amount of revenue which they yield. We stated the average ; sometimes it is in some places larger, sometimes less. We pay no attention to these fluctuations, they are due to the want of good administration. The reader will find that the whole revenue which we have enumerated amounts to about $4,920,000 \mathrm{Dy}$ nars, which make, at the present rate of exchange, the Dynár at 15 Dirhams, 73,800,000 Dirhams."

This sum represents 68,347 Roman pounds of gold, and does not amount to much more than two millions sterling, but this is only the revenue of the western provinces where the Dynár was the currency. It is true, if we cast up the above items, we obtain a sum which falls short by 127,000 Dynárs of the sum stated by Qodáma. This, howerer, is evidently owing to an omission or a mistake in the text.

If we omit in the item Tabaristan, the two hundred millions as being evidently too large, the revenue of the eastern provinces including the Sawád amounts to $223,487,320$ Dirhams, or $2,171,404$ Roman pounds of pure silver, or about 162 millions of francs. The income of the whole empire, as it was at the time of Qodáma, did not therefore amount quite to $8 \frac{1}{2}$ million pounds sterling. But we must recollect that a great proportion of it was the nett income, after all expenses of administration had been defrayed, and may be considered as the civil list of the Khalyf.

The study of the finances of the glorious Khalyfs would be edifying for discontented Musulmans in India. The Khalyfs, like Indian princes, squandered away the money in debauchery, ground down the people to the dust, surrounded themselves with Tartar mercenaries, who soon became a pretorian guard, full of insolence and insubordination. These deposed or put to death the Khalyf at pleasure, and no longer content with putting on the screw as tightly as possible, they plundered the provinces; and now those countries are so completely depopulated, that many a district, which at the time of Qodáma yielded a revenue of more than a million of Dirhams, cannot pay as many cowries.

There is much good in the Islám and in the Musulmans, but they have a great deal to learn, before they will be able to administer their own affairs.


[^0]:    * Which may be compared with that of Ibn Khordádbeh.

